

### AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all previous listings and versions of claims in this application.

1-4. (Cancelled)

5. (Currently Amended) A The method of claim 4, for prioritizing data transmissions from a switching station, the method comprising:

maintaining a database containing information from data transmissions through the switching station;

receiving a data transmission of the data transmissions;

selecting a property corresponding to the data transmission, the property reflecting a relative importance of the data transmission, the property obtained from the database and derived from a destination contained in the data transmission, wherein the property further comprises including a number of origins stored in the database, the origins having previously sent data transmissions to the destination through the switching station; and

determining a priority for the data transmission in accordance with the property.

6. (Previously Presented) The method of claim 5, wherein a data transmission having a number of origins greater than a threshold value receives a high priority, and a data transmission having a number of origins not greater than the threshold value receives a low priority.

7. (Previously Presented) The method of claim 6, wherein the threshold value is four (4) origins.

8. (Currently Amended) The method of claim [[2]] 5, further comprising periodically clearing the database to ensure that the database remains current.

9. (Currently Amended) The method of claim [[1]] 5, ~~further being~~ wherein the method is carried out by a packet prioritization station in communication with the switching station.

10. (Previously Presented) The method of claim 9, wherein the packet prioritization station is further configured to receive an origin and a destination for a data transmission from the switching station.

11. (Previously Presented) The method of claim 10, wherein the packet prioritization station is further configured to provide the priority to the switching station.

12. (Previously Presented) The method of claim 11, wherein the switching station communicates with the packet prioritization station through an interrupt controller, the interrupt controller providing an intransitive interrupt.

13. (Currently Amended) The method of claim [[1]] 5, wherein determining a priority for the data transmission in accordance with the property comprises assigning a high priority to a data transmission with a high relative importance, and assigning a low priority to a data transmission with a low relative importance.

14. (Previously Presented) The method of claim 13, further comprising ordering data transmissions of equal priority in cyclical form according to a port through which the data transmission will be transmitted.

15. (Cancelled)

16. (Currently Amended) A The computer-readable medium of claim 15, containing instructions that cause a prioritization system configured to prioritize data transmissions from a switching station to perform a method comprising:

wherein the method further comprises maintaining a database containing a destination and one or more origins associated with the destination, the origins having previously sent data transmissions to the destination through the switching station;

receiving a data transmission of the data transmissions;

selecting a property corresponding to the data transmission, the property reflecting a relative importance of the data transmission; and

determining a priority for the data transmission in accordance with the property.

17. (Previously Presented) The computer-readable medium of claim 16, wherein the priority is proportional to the number of origins associated with the destination of the data transmission.

18-19. (Cancelled)

20. (Currently Amended) A The prioritization system of claim 19, configured to prioritize data transmissions from a switching station, the prioritization system comprising:

a cache writing module configured to store a property corresponding to a data transmission, the property reflecting a relative importance of the data transmission;

a cache containing a database, the database containing the property, the property obtained from previous data transmissions through the switching station;

a cache reading module configured to receive the property; and

a comparison module configured to determine a priority of the data transmission in accordance with the property.

21. (Previously Presented) The prioritization system of claim 20, wherein the property corresponds to a destination of the data transmission.

22. (Previously Presented) The prioritization system of claim 21, wherein the property comprises a number of origins stored in the database, the origins having previously sent data transmissions to the destination through the switching station.

23. (Previously Presented) The prioritization system of claim 22, wherein the comparison module provides a high priority for a data transmission having more than a threshold number of origins, and a low priority for a data transmission having no more than a threshold number of origins.

24. (Previously Presented) The prioritization system of claim 23, wherein the threshold number of origins is four (4).

25. (Previously Presented) The prioritization system of claim 24, wherein the cache writing module further periodically deletes all destinations and origins from the database.

26. (Currently Amended) The prioritization system of claim ~~[[18]]~~ 20, further comprising a marking module configured to designate a current port of a plurality of ports of a switching station.

27. (Previously Presented) The prioritization system of claim 26, further comprising an incrementing module configured to cyclically change the current port to permit alternating data transmissions of equal priority.

28. (Cancelled)

29. (Currently Amended) ~~A The computer-readable medium of claim 28, for a system configured to prioritize data transmissions from a switching station, the computer-readable medium storing data structures comprising:~~

~~a cache writing module configured to store a property corresponding to a data transmission, the property reflecting a relative importance of the data transmission, wherein the property comprises including a number of origins associated with a destination contained in the data transmission;~~

~~a cache reading module configured to receive the property; and~~

~~a comparison module configured to determine a priority of the data transmission in accordance with the property.~~

30. (Previously Presented) The computer-readable medium of claim 29, wherein the priority is proportional to the number of origins.

31. (Currently Amended) A switching system configured to route data transmissions between a plurality of locations, the switching system comprising:

a switching station configured to receive and send the data transmissions;

a packet prioritization station module configured to determine a transmission order of the data transmissions, the packet prioritization station module being modularly connected to the switching station; and

the transmission order reflecting a relative importance of the data transmissions.

32. (Currently Amended) The switching system of claim ~~[[31]]~~ 33, wherein the switching station comprises:

a processor;

a program memory configured to provide instructions to the processor;

a buffer configured to store data transmissions;

a cache configured to store information from data transmissions;

a bus operably connected to provide communication between the processor, the buffer, and the cache; and

a plurality of ports connected to the buffer, the ports being in communication with a plurality of destinations.

33. (Currently Amended) A The switching system of claim 31, configured to route data transmissions between a plurality of locations, the switching system further comprising:

a switching station configured to receive and send the data transmissions;

a packet prioritization station configured to determine a transmission order of the data transmissions, the transmission order reflecting a relative importance of the data transmissions;  
and

an interrupt controller connected to the bus of the switching station and the packet prioritization station and disposed to control communications between the switching station and the packet prioritization station.

34. (Currently Amended) The switching ~~station system~~ of claim ~~[[32]]~~ 33, wherein at least one of the switching station and the packet prioritization station comprises a bus connected to the

interrupt controller.

35. (Currently Amended) The switching station system of claim [[31]] 33, wherein the packet prioritization station comprises:

- a processor;
- a program memory configured to provide instructions to the processor;
- a cache configured to store origins and destinations contained in data transmissions; and
- a bus operably connected to provide communication between the processor, the program memory, and the cache.

36. (New) A method for determining transmission priorities for data transmissions, the method comprising:

- receiving data transmissions, each data transmission including an origin and a destination,
- based at least in part on sampling the data transmissions, generating an index associating the destinations in the sampled data transmissions with the origins in the sampled data transmissions, and
- based at least in part on the index, determining transmission priorities for two or more of the data transmissions.

37. (New) The method of claim 36, wherein the transmission priorities for the two or more of the data transmissions are determined based on the quantities of different origins associated with the destinations of the two or more of the data transmissions in the index.

38. (New) The method of claim 37, wherein determining the transmission priorities for the two or more of the data transmissions comprises:

- assigning a high transmission priority to data transmissions that include a destination associated with a quantity of different origins in the index greater than a threshold.

39. (New) The method of claim 37, wherein determining the transmission priorities for the two or more of the data transmissions comprises:

assigning a low transmission priority to data transmissions that include a destination associated with a quantity of different origins in the index less than a threshold.

40. (New) The method of claim 37, wherein determining the transmission priorities for the two or more of the data transmissions comprises:

assigning a highest transmission priority to data transmissions that include a destination associated with the greatest quantity of different origins in the index, and

iteratively assigning a next highest transmission priority to data transmissions that include a destination associated with the next greatest quantity of different origins in the index.

41. (New) The method of claim 36, wherein the data transmissions comprise data packets.

42. (New) A processor program for determining transmission priorities for data transmissions, the processor program being stored on a processor readable medium and including instructions to cause a processor to:

receive data transmissions, each data transmission including an origin and a destination,

based at least in part on sampling the data transmissions, generate an index associating the destinations in the sampled data transmissions with the origins in the sampled data transmissions, and

based at least in part on the index, determine transmission priorities for two or more of the data transmissions.

43. (New) The processor program of claim 42, wherein the instructions to determine the transmission priorities for the two or more of the data transmissions include instructions to:

determine the transmission priorities for the two or more of the data transmissions based on the quantities of different origins associated with the destinations of the two or more of the data transmissions in the index.

44. (New) A device for determining transmission priorities for data transmissions, the device comprising:

at least one digital data processing device configured for:

receiving data transmissions, each data transmission including an origin and a destination,

based at least in part on sampling the data transmissions, generating an index associating the destinations in the sampled data transmissions with the origins in the sampled data transmissions, and

based at least in part on the index, determining transmission priorities for two or more of the data transmissions.

45. (New) The device of claim 44, wherein the digital data processing device is configured for:

determining the transmission priorities for the two or more of the data transmissions based on the quantities of origins associated with the destinations of the two or more of the data transmissions in the index.